Oct. 28, 1930. J. H. CONNER 1,779,463

FIRE ALARM

Filed July 24, 1929

Fig. 1.

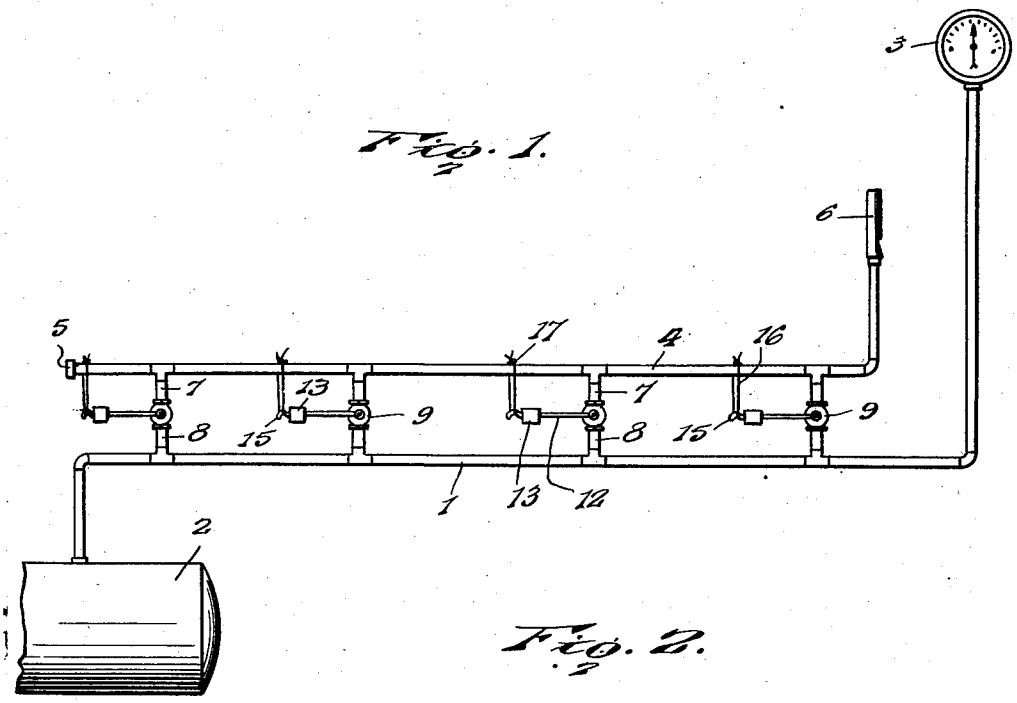


Fig. 2.

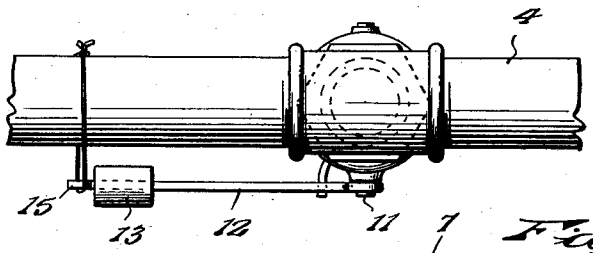


Fig. 3.

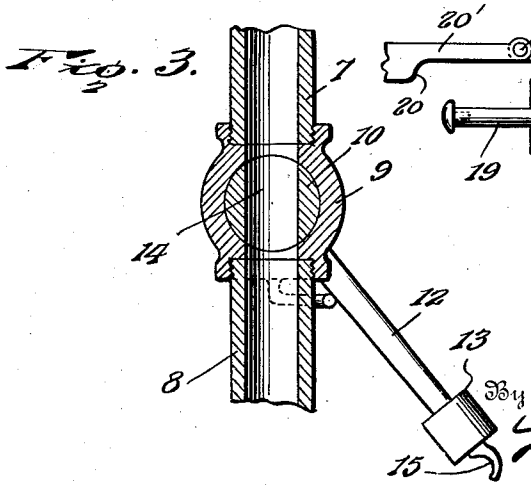
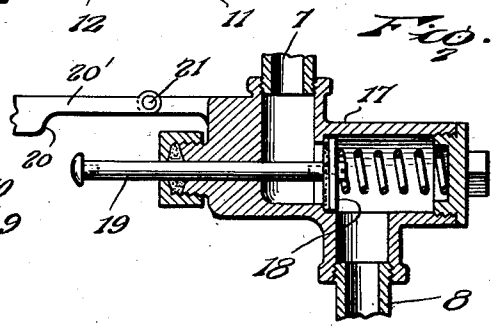


Fig. 4.



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UNITED STATES PATENT OFFICE

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FIRE ALARM

Application filed July 24, 1929. Serial No. 380,676.

The present invention is directed to improvements in fire alarms.

The primary object of the invention is to provide a device of this character so constructed that air under pressure will be released to sound an alarm upon the melting of a fusible element.

Another object of the invention is to provide a device of this kind which is extremely simple in construction, positive in operation, and one which can be easily and quickly installed for use.

Another object of the invention is to provide a device of this character wherein novel means are employed for holding the air controlling valves in closed position, the construction being such that the valves will be permitted to quickly open when a fire occurs, the opening of the valves causing an alarm to be sounded.

With these and other objects in view, this invention resides in the novel features of construction, formation, combination and arrangement of parts to be hereinafter more fully described, claimed and illustrated in the accompanying drawings, in which:

Figure 1 is a view, somewhat diagrammatic, illustrating the relative arrangement of the parts.

Figure 2 is a fragmentary top plan view.

Figure 3 is a vertical sectional view through one of the valves.

Figure 4 is a fragmentary sectional view of a modified form.

Referring to the drawing, 1 designates a pipe line which leads from a compressed air storage tank 2, said line having a gauge 3 connected with its terminal in order that the amount of pressure in the tank may be observed and so that the desired pressure for effective operation may be maintained.

Running parallel with the pipe line 1 is a pipe assembly 4, one terminal of which is closed by a cap 5, while the other terminal is connected with a whistle 6 of any suitable design.

It will, of course, be understood that the pipe line and pipe assembly will be strung through a building and will be so located that they will be subjected to heat caused by a fire which may occur at any point throughout the system.

The length of the pipe and pipe assembly will, of course, be governed by the size of the building to be equipped.

The pipe line and pipe assembly are connected at intervals by pipe sections 7 and 8 and between which are connected casings 9, said casings having rotatably engaged therein valves 10 provided with stems 11, to which are fixed the ends of the levers 12, said levers having weights 13 carried thereby. The valves 10 are provided with passages 14 which are normally positioned to cut off communication between the pipe line and pipe assembly, to prevent air from the pipe line passing to the pipe assembly.

The levers are provided with hooks 15 which are adapted to engage the loops 16 which serve to hold the passages 14 of the valves in their closed position. The loops are formed from single strands of fusible material and are engaged around the pipe assembly and with the hooks 15 to hold the levers 12 in their normal position. The terminals of the strands providing the loops are twisted, as at 17, to secure the same in place and effectively hold the levers elevated.

Obviously, when a loop melts the lever 12 upheld thereby will be released, whereupon it will swing downwardly, due to the presence of the weight 13 thereon, thereby opening the valve 10 and permitting air from the pipe line to pass into the pipe assembly to sound the whistle, thus indicating that a fire has occurred at some point within the building. The whistle may be located exteriorly of the building or may be located in a watch house.

The tank 2 may be furnished with air from any suitable source.

From the foregoing, it is thought that the operation and many advantages of the herein described invention will be apparent to those skilled in the art without further description and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit

or sacrificing any of the advantages of the invention.

In Figure 4, the pipe sections 7 and 8 have coupled therebetween casings 17 in which are mounted spring pressed valves 18, the stems 19 of which are arranged to be engaged by the cams 20 carried by the levers 20′ which, in this instance, are pivoted, as at 21, with the casings 17 and are held in their inoperative position by the fusible loops 16. Obviously, when the loops melt and the levers 20′ drop the cams 20 thereof will engage the stems and unseat the valves 18.

What I claim is:

1. In a pneumatic fire alarm, the combination with two lines of piping arranged parallel, one of said pipes being connected with a source of fluid under pressure, and having a gauge for indicating said pressure, and the other of said pipes being connected with signal means, of a plurality of pipes connecting both of said lines of piping and each being equipped with a normally closed valve, said valve having a stem projecting exteriorly thereof, a pivoted lever, an element of fusible material disposed exteriorly of and near said stem and normally holding said pivoted lever substantially horizontal, and a weight on said lever for rocking said lever downward upon fusing of said fusible material, said lever operating to move said stem to open said valve and permit of the flow of fluid under pressure through said valve to operate said signal means.

2. In a pneumatic fire alarm, the combination with a pipe for supplying fluid under pressure and a pipe leading to signal means, of a coupling pipe connecting both of said pipes and having a valve therein normally closed, a pivoted lever associated with said valve and disposed exteriorly thereof, a weight on said lever, and a loop of fusible material encircling said lever and the pipe which leads to the signal means and disposed exteriorly of and adjacent said valve, fusing of said material permitting of said lever gravitating under influence of the weight thereon, said lever being adapted while gravitating to open said valve and permit passage of fluid from said fluid supply pipe to said pipe leading to the signal means.

In testimony whereof I affix my signature.

JAMES H. CONNER. [L. S.]